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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,753	01/15/2004	Satish Sundar	8279/DSM/BCVD/JW	6413

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EXAMINER

KEENAN, JAMES W

ART UNIT	PAPER NUMBER
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3652

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/758,753

Applicant(s)

SUNDAR ET AL.

Examiner

James Keenan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/15/04 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

1. Applicant's election without traverse of Group II in the reply filed on 5/23/06 is acknowledged. Cancellation of non-elected claims 1-22 is acknowledged.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the adjustable pin (claim 48) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Although applicant argues that the pins are shown in figure 4 and described in paragraph 34, the drawings merely show static pins. There is no indication as to how or in what manner they are adjustable. Simply stating that they are adjustable in the specification does not satisfy the drawing requirement.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 23-60 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 23, last line, the recitation "during substrate transfer" is indefinite in that the substrate has never been set forth as being transferred, nor would it be inherent, since there is only one chamber set forth and the robot's only claimed functionality is to retain, via the gripper assembly, a substrate on the end effector.

Claim 31 depends from canceled claim 21 (claim 30 will be assumed).

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 23-36 and 39-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sundar et al in view of Smith et al, both previously cited.

As noted in the previous Office action, Sundar shows a semiconductor wafer processing system comprising chamber 404, robot 10 with end effector 60, and gripper

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assembly 90 which is actuated by a translation member 82 (of which several embodiments are disclosed) disposed on the robot which causes the gripping assembly to release its clamping pressure on the wafer upon movement of the robot arm to a desired position in the chamber.

Sundar does not disclose a structure for actuating the gripper remote from the robot and end effector.

Smith shows a robotic end effector wherein the gripping jaws thereof are moved to an open position to release an article held thereby upon contact of a portion of the end effector with a structure 161 remote from the robot and end effector (fig. 5 and 10). The structure is part of a station where processing on the article is performed.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Sundar such that the structure for actuating the gripper assembly was part of the processing chamber rather than the robot arm, as suggested by Smith, as this would allow more precise and repeatable positioning of the article at the desired location, in that the chamber wall is not subject to wear as much as the robot arm would be, and thus would not tend to come out of alignment as frequently.

Re claim 24, note in Sundar (fig. 3-4 embodiment) jaws 120, 130, mounting bracket 80, and biasing member 114. Other embodiments may read on some or all claims as well.

Re claim 25, note the jaws of Sundar comprise unlabeled base portions coupled directly to the mounting bracket through unlabeled pivot members clearly shown in the drawings, arms 90 coupled to first ends of the base portions, strikers 121, 131 coupled

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to second ends of the base portions, at least a portion of which extend outwardly from the base portions at a substantially normal angle thereto, and grippers 93 coupled to the second ends of the arms.

Re claim 27, Sundar as modified does not show the gripper to comprise a shaft extending outwardly from the arm, although there is a shaft upon which a roller rotates (fig. 12). Nevertheless, it would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Sundar such that the shaft extended outwardly from the arm, as this would merely be an alternate equivalent design expediency, the use of which would require no undue experimentation and produce no unexpected results.

Re claim 28, the use of a bearing to reduce friction between mechanically connected elements is a well known design expediency.

Re claims 29 and 30, Sundar shows the actuating structure 82 rather than the striker to comprise a shaft with a rotatable sleeve 84 coupled thereto. It would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Sundar such that the striker comprised a sleeve rotating on a shaft, as this would merely be the reversal of parts, which has been held to require only routine skill in the art. Again, a bearing is a well known design expediency.

Re claims 35 and 36, the striker plate of Sundar, absent any structural limitations, is considered to be the chamber wall 412 and is "positionable", as broadly claimed, along an axis of extension of the end effector.

Re claim 43, note the structure of the gripper shown in Sundar fig. 12, including roller or "disk" 92.

Re claim 47, since the jaws of Sundar pivot to open and close, the angular displacement thereof is considered to be adjustable.

Re claim 48, note stop members 150 and 151 of Sundar. Although they are not pins, they perform the same function, and the substitution thereof is considered an obvious design expediency. Although it is not clear if either member is adjustable, col. 10, lines 25-53 disclose that the amount of retraction of the clamp fingers 90 (which is controlled by the stop members) can be adjusted. It therefore would have been obvious, if not inherent, for one of ordinary skill in the art to have made at least one stop member adjustable, since it has been held that the provision of adjustability, where needed (as explicitly mentioned in this reference), involves only routine skill in the art.

Re claim 61, the apparatus of Sundar is for transferring substrates between first and second vacuum chambers.

7. Claims 37-38 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

8. Applicant's arguments filed 11/10/06 have been fully considered but they are not persuasive.

Applicant argues that the combination of Sundar with Smith would not yield an operational gripper assembly because Sundar's gripper operates via extension of the robotic arm while Smith's operates via rotation. However, one of ordinary skill in the art would realize that regardless of how the robotic arm moves, the suggestion by Smith to utilize a structure remote from the robot to actuate the gripper would have been obvious. References do not need to physically "bolt" together to suggest obviousness. Furthermore, the type of movement of the robotic arm is a moot point anyway, inasmuch as applicant's claims are not so limited.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

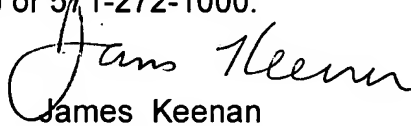
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Keenan whose telephone number is 571-272-6925. The examiner can normally be reached on (schedule varies).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathy Matecki can be reached on 571-272-6951. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


James Keenan
Primary Examiner
Art Unit 3652

jwk
1/23/07